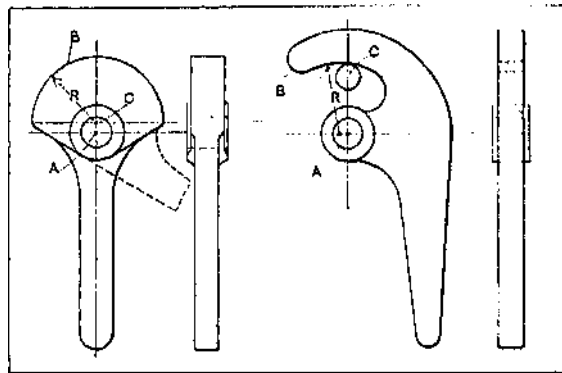


ing purposes, necessary guides must be provided for the strap, so as to hold it in the required position. These guiding arrangements may consist of rigid rods, ground and fitted into drilled and reamed holes in the strap, or square bars held firmly in the jig, and fitted into square slots at the ends of the strap. The bars may also be round, and the slots at the ends of the strap half round, the principle in all cases remaining the same; but the more rigid the guiding arrangement is, the more may the accuracy of the locating be depended upon.

The ordinary eccentric lever works on the same principle as the eccentric rods just described. There are a great variety of eccentric clamping devices, but they are not as commonly used



Figs. 48 and 49. Cams or Eccentrics used for Clamping

in present-day jig design as they were a few years ago. The eccentric clamping levers, however, provide good and rapid clamping action. In Fig. 48 is shown one especially intended for clamping finished work. It is not advisable to use this kind of lever on rough castings, for the reason that the latter may vary so much that the cam or eccentric would require too great a throw for rigid clamping to suit the rough castings. The extreme throw of the eccentric lever should, in general, not exceed one-sixth of the length of the radius of the eccentric arc, if the rise takes place during one-quarter of a complete turn of the lever. This would give an extreme throw of, say, $\frac{1}{4}$ inch for a lever having $\frac{1}{2}$ inch radius of the cam or eccentric. It is plain that as the eccentric cam swivels about the center A,